

PATENT COOPERATION TREATY

7 NOV. 2004

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

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PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

		RECEIVED	
		NOV 12 2004	Date of mailing (day/month/year)
Applicant's or agent's file reference 08241-106		HARRINGTON & SMITH, LLP	26.10.2004
IMPORTANT NOTIFICATION			
International application No. PCT/CA 03/00980	International filing date (day/month/year) 27.06.2003	Priority date (day/month/year) 05.07.2002	
Applicant VOICEAGE CORPORATION ET AL.			

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/B/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

- 7 NOV. 2004

BROUILLLETTE VONIE PRINCE

Applicant's or agent's file reference 08241-106	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/CA 03/00980	International filing date (day/month/year) 27.06.2003	Priority date (day/month/year) 05.07.2002
International Patent Classification (IPC) or both national classification and IPC G10L19/14		
Applicant VOICEAGE CORPORATION ET AL.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
 - This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 10 sheets.
3. This report contains indications relating to the following items:
 - I Basis of the opinion
 - II Priority
 - III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV Lack of unity of invention
 - V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI Certain documents cited
 - VII Certain defects in the international application
 - VIII Certain observations on the international application

Date of submission of the demand 03.02.2004	Date of completion of this report 26.10.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Burchett, S Telephone No. +31 70 340-2374



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/CA 03/00980

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-38 as originally filed

Claims, Numbers

1-36 received on 20.07.2004 with letter of 16.07.2004

Drawings, Sheets

18-8/8 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/CA 03/00980

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-36
	No: Claims	
Inventive step (IS)	Yes: Claims	1-36
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-36
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/CA03/00980

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following document:
D1: EP-A-0 492 459 (SIP) 1 July 1992 (1992-07-01)
- 2 Document D1, which is considered to represent the most relevant state of the art, discloses (cf. p. 5, col. 8, l. 49 - p. 6, col. 10, l. 51, p. 8, col. 13, l. 20-26) a method for interoperating two different communication schemes from which the subject-matter of claim 1 differs in that replacement signal-coding parameters to replace a dropped portion of the signal-coding parameters of the first communication scheme are generated at the decoding side of the second communication system.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

- 3 The subject-matter of claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

According to the method of D1, at the decoding side of the second communication scheme, only the transmitted signal-coding parameters are used for decoding. Here, a loss in decoded speech quality is accepted and part of the inventive concept. D1 therefore provides no hint to the replacement of dropped signal-coding parameters at the decoding side of the second communication scheme. This technical feature is in the light of the prior art therefore not obvious for the skilled person, even though methods for a replacement of lost packets due to transmission errors are generally known in the field.

- 4 Independent method claims 9 and 14 and independent system claims 19, 27, and 32 are corresponding to the subject-matter of claim 1. Those claims are therefore also new (Article 33(2) PCT) and inventive (Article 33(3) PCT).
- 5 Claims 2-8 are dependent on claim 1, claims 10-13 are dependent on claim 9, claims 15-18 are dependent on claim 14, claims 20-26 are depending on claim 19, claims 28-31 are depending on claim 27, and claims 33-36 are depending on

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/CA03/00980

claim 32. The dependent claims as such also meet the requirements of the PCT with respect to novelty and inventive step.

6 Nevertheless, the application does not meet the requirements of Article 6 PCT, because claims 1-36 in their entity do not meet the requirement of conciseness:

6.1 According to Rule 6.1(a) PCT, the number of claims shall be reasonable in consideration of the nature of the invention claimed. Although claims 1, 9, and 14 have been drafted as separate, independent method claims, they relate effectively to the same subject-matter and differ from each other only with regard to the definition of the subject-matter for which protection is sought. In particular, claim 9 contains all the technical features of claim 1. The subject-matter of claim 14 differs from the scope of claim 1 only in that a "method of transmission" is disclosed instead of a "method of interoperability". However, the term "method of interoperability" is considered as comprising a method of transmission, since no interoperability in communication schemes would be applicable without transmission of data.

6.2 Independent system claims 19, 27, and 32 correspond to method claims 1, 9, and 14. Therefore, the same objections than for the latter claims apply also for claims 19, 27, and 32.

20. 07. 2004

WHAT IS CLAIMED IS:

(65)

1. A method for interoperating a first station using a first communication scheme and comprising a first coder and a first decoder with a second station using a second communication scheme and comprising a second coder and a second decoder, wherein communication between the first and second stations is conducted by transmitting signal-coding parameters from the coder of one of the first and second stations to the decoder of the other of said first and second stations, said method comprising:

encoding a sound signal using the first coder to generate signal-coding parameters according to the first communication scheme;

receiving a request to transmit signal-coding parameters from said one station to the other station using said second communication scheme;

15 in response to said request, dropping a portion of the signal-coding parameters encoded according to the first communication scheme and transmitting to the decoder of the other station the remaining signal-coding parameters, wherein dropping a portion of the signal-coding parameters comprises dropping fixed codebook indices; and

20 generating replacement signal-coding parameters to replace said portion of the signal-coding parameters and decoding, in the decoder of said other station, the signal-coding parameters.

2. A method as defined in claim 1, wherein receiving a request 25 comprises:

receiving a request to transmit the signal-coding parameters from said one station to the other station using a half-rate communication mode.

30 3. A method as defined in claim 1, wherein the first communication scheme is CDMA2000 VBR-WB and the second communication scheme is AMR-WB.

4. A method as defined in claim 1, wherein decoding the signal-coding parameters comprises:

operating the decoder of said other station in a full-rate mode.

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5. A method as defined in claim 1, wherein generating replacement signal-coding parameters comprises:

randomly generating replacement signal-coding parameters to replace said portion of the signal-coding parameters.

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6. A method as defined in claim 1, wherein:

generating replacement signal-coding parameters comprises randomly generating replacement fixed codebook indices.

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7. A method as defined in claim 1, wherein:

dropping a portion of the signal-coding parameters comprises inserting an identification of a communication mode; and

transmitting the remaining signal-coding parameters comprises transmitting to the decoder of said other station the communication mode identification along with the remaining signal-coding parameters.

20
8. A method as defined in claim 1, comprising, in the coder of said one station:

25 performing a fixed codebook search to determine a fixed codebook excitation; and

using the determined fixed codebook excitation for updating an adaptive codebook content and filter memories for next frames.

9. A method for interoperating a first station using a first communication
30 scheme and comprising a first coder and a first decoder with a second station using a second communication scheme and comprising a second coder and a

second decoder, wherein communication between the first and second stations is conducted by transmitting signal-coding parameters related to a sound signal from the coder of one of the first and second stations to the decoder of the other of said first and second stations, the method comprising:

- 5 classifying the sound signal to determine whether the signal-coding parameters should be transmitted from the coder of said one station to the decoder of the other station using a first communication mode in which full bit rate is used for transmission of the signal-coding parameters;
- 10 receiving a request to transmit the signal-coding parameters from the coder of said one station to the decoder of the other station using a second communication mode designed to reduce bit rate during transmission of the signal-coding parameters;
- 15 when classification of the sound signal determines that the signal-coding parameters should be transmitted using the first communication mode, and
- 20 when the request to transmit the signal-coding parameters using the second communication mode is received, dropping a portion of the signal-coding parameters from the coder of said one station and transmitting to the decoder of the other station the remaining signal-coding parameters using the second communication mode, wherein dropping a portion of the signal-coding parameters comprises dropping fixed codebook indices.

10. A method as defined in claim 9, wherein receiving a request comprises:

- 25 receiving a request to transmit the signal-coding parameters from the coder of said one station to the decoder of the other station using a half-rate communication mode.

11. A method as defined in claim 9, wherein:

- 30 dropping a portion of the signal-coding parameters from the coder of said one station comprises inserting an identification of the second communication mode; and

transmitting the remaining signal-coding parameters comprises transmitting to the decoder of said other station the identification of the second communication mode along with the remaining signal-coding parameters.

5 12. A method as defined in claim 9, further comprising regenerating said portion of the signal-coding parameters and decoding, in the decoder of said other station, said signal-coding parameters into the sound signal.

10 13. A method as defined in claim 12, wherein regenerating said portion of the signal-coding parameters comprises randomly regenerating said portion of the signal-coding parameters.

14. A method for transmitting signal-coding parameters from a first station to a second station, comprising:

15 in one of said first and second stations, coding the sound signal in accordance with a full-rate communication mode;

16 receiving a request to transmit the signal-coding parameters from said one station to the other station of said first and second stations using a second communication mode designed to reduce bit rate during transmission of said signal-coding parameters;

20 in response to the request, converting the signal-coding parameters coded in full-rate communication mode to signal-coding parameters coded in the second communication mode, wherein converting the signal-coding parameters coded in full-rate communication mode to signal-coding parameters coded in the second communication mode comprises dropping a portion of the signal-coding parameters, and wherein dropping a portion of the signal-coding parameters comprises dropping fixed codebook indices; and

25 transmitting the signal-coding parameters coded in the second communication mode to the other of said first and second stations.

15. A method as defined in claim 14, wherein receiving the request comprises:

receiving a request to transmit the signal-coding parameters from said one station to the other station using a half-rate communication mode.

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16. A method as defined in claim 14, wherein:

converting the signal-coding parameters coded in full-rate communication mode to signal-coding parameters coded in the second communication mode comprises inserting an identification of the second communication mode; and

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transmitting the signal-coding parameters coded in the second communication mode to the other of said first and second stations comprises transmitting to the other station the identification of the second communication mode along with the non-dropped signal-coding parameters.

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17. A method as defined in claim 14, further comprising regenerating said portion of the signal-coding parameters and, in the decoder of said other station, decoding said signal-coding parameters.

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18. A method as defined in claim 17, wherein regenerating said portion of the signal-coding parameters comprises randomly regenerating said portion of the signal-coding parameters.

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19. A system for interoperating a first station using a first communication scheme and comprising a first coder and a first decoder with a second station using a second communication scheme and comprising a second coder and a second decoder, wherein communication between the first and second stations is conducted by transmitting signal-coding parameters from the coder of one of the first and second stations to the decoder of the other of said first and second stations, said system comprising:

30

means for encoding a sound signal using the first coder to generate signal-coding parameters according to the first communication scheme;

means for receiving a request to transmit signal-coding parameters from said one station to the other station using said second communication scheme;

means for dropping, in response to said request, a portion of the signal-coding parameters encoded according to the first communication scheme and

5 means for transmitting to the decoder of the other station the remaining signal-coding parameters, wherein the means for dropping a portion of the signal-coding parameters comprises means for dropping fixed codebook indices; and

means for generating replacement signal-coding parameters to replace said portion of the signal-coding parameters and means for decoding, in the decoder of said other station, the signal-coding parameters.

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20. A system as defined in claim 19, wherein the request receiving means comprises:

means for receiving a request to transmit the signal-coding parameters

15 from said one station to the other station using a half-rate communication mode.

21. A system as defined in claim 19, wherein the first communication scheme is CDMA2000 VBR-WB and the second communication scheme is AMR-WB.

20

22. A system as defined in claim 19, comprising means for operating the decoder of said other station in a full-rate mode.

23. A system as defined in claim 19, wherein the means for generating replacement signal-coding parameters comprises:

25 means for randomly generating replacement signal-coding parameters.

24. A system as defined in claim 19, wherein:

the means for generating replacement signal-coding parameters

30 comprises means for randomly generating replacement fixed codebook indices.

25. A system as defined in claim 19, wherein:

the means for dropping a portion of the signal-coding parameters comprises means for inserting an identification of a communication mode; and

5 the means for transmitting the remaining signal-coding parameters comprises means for transmitting to the decoder of said other station the communication mode identification along with the remaining signal-coding parameters.

26. A system as defined in claim 19, comprising, in the coder of said one station:

means for performing a fixed codebook search to determine a fixed codebook excitation; and

means for updating an adaptive codebook content and filter memories for next frames using the determined fixed codebook excitation.

15 27. A system for interoperating a first station using a first communication scheme and comprising a first coder and a first decoder with a second station using a second communication scheme and comprising a second coder and a second decoder, wherein communication between the first and second stations 20 is conducted by transmitting signal-coding parameters related to a sound signal from the coder of one of the first and second stations to the decoder of the other of said first and second stations, the system comprising:

means for classifying the sound signal to determine whether the signal-coding parameters should be transmitted from the coder of said one station to 25 the decoder of the other station using a first communication mode in which full bit rate is used for transmission of the signal-coding parameters;

means for receiving a request to transmit the signal-coding parameters from the coder of said one station to the decoder of the other station using a second communication mode designed to reduce bit rate during transmission of 30 the signal-coding parameters;

means for dropping, when classification of the sound signal determines that the signal-coding parameters should be transmitted using the first communication mode and when the request to transmit the signal-coding parameters using the second communication mode is received, a portion of the
5 signal-coding parameters from the coder of said one station and transmitting to the decoder of the other station the remaining signal-coding parameters using the second communication mode, wherein the means for dropping a portion of the signal-coding parameters comprises means for dropping fixed codebook indices.

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28. A system as defined in claim 33, wherein the request receiving means comprises:

means for receiving a request to transmit the signal-coding parameters from the coder of said one station to the decoder of the other station using a
15 half-rate communication mode.

29. A system as defined in claim 27, wherein:
the means for dropping a portion of the signal-coding parameters from the coder of said one station comprises means for inserting an identification of
20 the second communication mode; and

the means for transmitting the remaining signal-coding parameters comprises means for transmitting to the decoder of said other station the identification of the second communication mode along with the remaining signal-coding parameters.

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30. A system as defined in claim 27, further comprising means for regenerating said portion of the signal-coding parameters and the decoder of said other station for decoding said signal-coding parameters into the sound signal.

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31. A system as defined in claim 30, wherein the means for regenerating said portion of the signal-coding parameters comprises means for randomly regenerating said portion of the signal-coding parameters.

5 32. A system for transmitting signal-coding parameters from a first station to a second station, comprising:

 in one of said first and second stations, a coder for coding the sound signal in accordance with a full-rate communication mode;

10 means for receiving a request to transmit the signal-coding parameters from said one station to the other station of said first and second stations using a second communication mode designed to reduce bit rate during transmission of said signal-coding parameters;

15 means for converting, in response to the request, the signal-coding parameters coded in full-rate communication mode to signal-coding parameters coded in the second communication mode, wherein the means for converting the signal-coding parameters coded in full-rate communication mode to signal-

20 coding parameters coded in the second communication mode comprises means for dropping a portion of the signal-coding parameters, and wherein the means for dropping a portion of the signal-coding parameters comprises means for dropping fixed codebook indices; and

 means for transmitting the signal-coding parameters coded in the second communication mode to the other of said first and second stations.

25 33. A system as defined in claim 32, wherein the request receiving means comprises:

 means for receiving a request to transmit the signal-coding parameters from said one station to the other station using a half-rate communication mode.

30 34. A system as defined in claim 32, wherein:

 the means for converting the signal-coding parameters coded in full-rate communication mode to signal-coding parameters coded in the second

communication mode comprises means for inserting an identification of the second communication mode; and

the means for transmitting the signal-coding parameters coded in the second communication mode to the other of said first and second stations

5 comprises means for transmitting to the other station the identification of the second communication mode along with the non-dropped signal-coding parameters.

35. A system as defined in claim 32, further comprising means for regenerating said portion of the signal-coding parameters and the decoder of said other station for decoding said signal-coding parameters.

36. A method as defined in claim 35, wherein the means for regenerating said portion of the signal-coding parameters comprises means for randomly regenerating said portion of the signal-coding parameters.